

The Geography of Phytochemical Races

This book presents an overview of geographic patterns in the distribution of plant secondary metabolites in natural populations. Examples include most common natural products: acetylenic derivatives, alkaloids, carotenoids, cyanogenic glycosides, flavonoids, terpenes of various sizes, as well as other structural types less easily categorized. By comparison, earlier reports in the literature on "chemical races" focused either on individual classes of compounds, on specific taxa, or on a particular geographic area. Following an introduction that includes definitions of phytochemical and biogeographic ideas, information is presented in five loosely defined categories: (1) trans-oceanic disjunctions, (2) examples within continents, (3) after the ice, (4) oceanic islands, and (5) polar disjunctions.

It is the underlying idea in evolution that natural variation is the raw material upon which selection works. It seems reasonable to suggest that this is as true with plant secondary metabolites as with any other feature that confers an advantage to one set of individuals over another as they colonize new habitats. Typical examples include variation in antiherbivore or antifungal properties of plant chemicals; or subtle changes in floral pigmentation and patterning that could affect pollinator behavior. Many systems of this sort have provided challenges for chemical-ecological research; many of the examples compiled in this book would likely do the same.

ISBN 978-1-4020-9051-6



9 781402 090516